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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/488,141	01/20/2000	Mirjana Popovic	SMC1P003	4005

22434 7590 11/17/2004

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EXAMINER

SINGH, RAMNANDAN P

ART UNIT PAPER NUMBER

2644

DATE MAILED: 11/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/488,141

Applicant(s)

POPOVIC ET AL.

Examiner

Ramnandan Singh

Art Unit

2644

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,4-7,9,10,12,13,16-20,22,23,26-28 and 31-39 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28,31 and 34-39 is/are allowed.
- 6) ☒ Claim(s) 1,4-6,9,10,16-19,22,23,32 and 33 is/are rejected.
- 7) ☒ Claim(s) 7,12,13,20,26 and 27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments filed on August 16, 2004 have been fully considered but they are not persuasive. Further, the title should be "Amendment B" (not Amendment A).

Applicant's argument—"Boutaub et al [US 5,072,418] state that "the interrupts mask register is set of bits by which interrupts to the CPU can be disabled by masking them". Accordingly, Leach when properly prefaced by the teachings of Boutaub discloses the masking of interrupts in instructions strings. Thus, in no way does Leach teach or suggest the user of a mask to cancel echoes in a digitized signal" on page 14.

Examiner's response--In response to applicant's arguments against the piecemeal analysis of references, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this respect, it may be noted that the Boutaub's embodiments are nevertheless teachings to one of the ordinary skill in the art to apply these masks to other applications. As such, Boutaub et al suggest the following: "Telecommunications inventions contemplated according to the teachings and principles herein disclosed include echo cancellers, ADPCM transcoders, digital PBXs, line repeaters, digital radio, digital speech interpolation (DSI) systems, packet switching systems, and spread-spectrum communications systems" [col. 27, line

Art Unit: 2644

63 to col. 28, line 4]. In addition, Boutaub et al teach an improved echo canceling system 515 [Figs. 8-9; col. 31, lines 31-50].

2. **Status of Claims**

Claims 6, 19, 28, 34 and 37 are amended.

Claims 2-3, 8, 11, 14-15, 21, 24-25, 29-30 are cancelled.

Claims 1, 4-7, 9-10, 12-13, 16-20, 22-23, 26-28 and 31-39 are pending.

***Claim Objections***

3. Claim 31 is objected to because of the following informalities:

Claim 31 recites "The method of claim **29**" in line 1. This is in error.

Replace "claim **29**" with "claim **28**".

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 1, 4-6, 9-10, 16-19, 22-23, 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vary [US 4,623,980] in view of McCaslin et al [US 5,764,753] and further in view of Leach [US 6,128,725].

Art Unit: 2644

Regarding claim 1, Vary teaches a method of canceling echo in speech frequency electrical signals (i.e. communication systems) comprising the steps of: applying a monitoring signal to a discrete Fourier transform to produce **spectral** signals (i.e. **to determine a power density function**)  $V_v$  ; and processing the spectral signals by any combination of an adaptive level control and echo cancellation to produce  $W_v$  suitable for **echo cancellation and signal masking** [col. 7, line 41 to col. 8, line 27; col. 8, lines 42-48; col. 2, lines 19-29; col. 2, line 59 to col. 3, line 9; col. 6, line 45 to col. 7, line 9].

Vary does not teach expressly estimating the power of a signal utilizing an IIR filter; and applying mask generating circuitry to cancel echoes.

McCaslin et al teaches calculating power level [Figs. 2, 20, 22; col. 3, line 59 to col. 4, line 4; col. 22, lines 35-45].

Leach teaches least significant bit (LSB) mask generation circuitry 610 and most significant bit (MSB) mask generation circuitry 620 to apply masking for echo cancellation [Fig. 9; col. 6, line 19 to col. 7, line 54; col. 8, lines 7-33; col. 3, lines 36-44].

Vary, McCaslin et al and Leach are analogous art because they are from a similar problem solving area, viz. , echo suppression in communications.

Art Unit: 2644

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to apply the power estimators of McCaslin et al to Vary to compute the power density function of signal using the IIR filtering [McCaslin et al; col. 1, 35-41]; and the mask generator of Leach to the echo canceller system of McCaslin et al and Vary to cancel echoes [ Leach; col. 1, col. 3, lines 39-44] and provide an echo-free communications.

Claims 16, 32 are essentially similar to claim 1 and are rejected for the reasons stated above.

Regarding claims 10, 23, 33, the limitations are shown above.

Regarding claims 4-6, McCaslin et al teaches generating a power level envelope using Equation (2) [Fig. 2; col. 7, lines 34-60; col. 28, lines 44-51; col. 30, lines 4-15].

Claims 17-19 are essentially similar to claims 4-6 and are rejected for the reasons stated above.

Regarding claim 9, Leach teaches a least significant bit (LSB) mask generation circuit shown in Fig. 10A, wherein the LSB mask has a zero in all bit positions [col. 6, lines 59-62].

Art Unit: 2644

Claim 22 is essentially similar to claim 9 and is rejected for the reasons stated above.

***Allowable Subject Matter***

6. Claims 28, 31, 34-39 are allowable.

The Examiner's statement for reasons of allowance has been given in the previous Office action.

7. Claims 7, 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. Claims 12-13 being dependent from claim 7, and claims 26-27 being dependent from claim 20 are also objected.

***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

Art Unit: 2644

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramnandan Singh whose telephone number is (703)308-6270. The examiner can normally be reached on M-F(8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester Isen can be reached on (703)-305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**FORESTER W. ISEN**  
**SUPERVISORY PATENT EXAMINER**

Ramnandan Singh  
Examiner  
Art Unit 2644

